

**REMARKS**

**A. Status of Claims and Support for Amendments**

Claims 63-66 have been amended. Support for the  $\beta$ -lactamase sequence with the numbering convention starting at amino acid 26 can be found, for example, in Figure 2 of the specification.

**B. Specification**

The specification has been amended to specify the Government's interest in the current invention in accordance with 37 C.F.R. §401.14(f)(4).

**C. Drawings**

The Examiner has objected to Fig. 2 as not disclosing every feature of the claimed invention. More specifically, the Examiner asserts that Fig. 2 does not disclose amino acids 1-25 as claimed.

Applicants note that claims 63-66 have been amended to recite "amino acids 26 to 188 up to amino acid 207." Thus, the recitation of amino acids 1-25 has been canceled from the claims.

Because the feature not shown in Figure 2 has been canceled from the claims, Applicants respectfully request withdrawal of the objection.

**D. Claim Rejection Under 35 U.S.C. §112, first paragraph**

The Examiner asserts that the specification and claims do not provide support and do not adequately disclose a SEQ ID NO:2 wherein lysine, proline and methionine are at positions 55, 62, and 182.

As a preliminary matter, Applicants note that claims 63-66 have been amended to clarify the numbering convention and positions for the claimed substitutions (a), (b), and (c). As amended, Applicants respectfully assert that the specification provides support and adequately discloses a  $\beta$ -lactamase sequence containing "(a) a lysine to glutamic acid substitution at

position 55, (b) a proline to serine substitution at position 62, and (c) a methionine to threonine substitution at position 182."

Applicants respectfully direct the Examiner's attention to FIG. 2. The sequence of FIG. 2 is identical the sequence of SEQ ID NO:2. As the Examiner has pointed out, the numbering convention of FIG. 2 differs from the numbering convention of SEQ ID NO:2. FIG. 2 starts at amino acid number 26 and SEQ ID NO:2 starts at amino acid number 1.

SEQ ID NO:2 starts at amino acid number 1 because Applicants are required, by rule, to begin amino acid sequence listings with the "number 1" (see 37 CFR §1.822(d)(4), stating "the enumeration of amino acids shall start at the first amino acid at the amino terminal as number 1.") Therefore, the designation of the first amino acid of SEQ ID NO:2 as "number 1" is no more than an arbitrary convention required by law.

FIG. 2 starts at amino acid number 26 because this is the convention well known in the art. See, e.g. Jelsch *et al.*, *Proteins Struct. Funct.* 16:364-383 (1993), which is disclosed in the specification at page 7, line 2. Therefore, after examining FIG. 2 and the rest of the written description, Applicants submit that one skilled in the art would immediately recognize that Applicants were in possession of the N-terminal fragment of claims 63-66 at the time the application was filed.

Therefore, because the specification and claims provide support and adequately disclose a sequence identical to SEQ ID NO:2 wherein lysine, proline and methionine are at positions 55, 62, and 182, Applicants submit that the claims as amended meet the requirements of 35 U.S.C. § 112, first paragraph.

**E. Claim Rejection Under 35 U.S.C. §112, second paragraph**

The Examiner asserts that claim 63-66 are indefinite for failing to point out and distinctly claim the invention.

Applicants submit that the claims, as amended, are clear and definite as required by 35 U.S.C. §112, second paragraph. As discussed above, the claims have been amended to clearly recite the designated numbers of each amino acid in the  $\beta$ -lactamase sequence. In addition to this explicit recitation, the numbering convention used in claims 63-66 is well known

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in the art. *See* Section C remarks. Therefore, after reading claims 63-66, Applicants submit that one skilled in the art would immediately recognize that the substitutions at positions 55, 62, and 182 correspond to the labeled lysine, proline and methionine residues, respectively.

Therefore, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. §112, second paragraph.

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**CONCLUSION**

In view of the foregoing, Applicants believe the claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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